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Spirogyra under Shock.—Stanley Coulter. (Bot. Gazette, xii., pp. 153-157; five figures.)

Sophora secundiflora—Fasciation in.—George Vasey. (Bot. Gazette, xii., pp. 160, 161; one plate.)

Thuja gigantea, Nutt. (Garden, xxxi., p. 615.)

Vegetable Parasites and Evolution.—W. G. Farlow, M.D. (Advance Sheets from the Proceedings of the A. A. A. S., Vol. xxxvi; 19 pages.)

It was a pleasant surprise to receive the vice-president's address in pamphlet form the same day that it was given and to find it reprinted entire in the Botanical Gazette (Vol. xii., pp. 173-189), ere a week had elapsed since the close of the meeting. It is difficult to put in a few words the exact scope of this most interesting essay; suffice it is to say that after stating that zoölogists have gone farther than botanists in their efforts to explain the evolution of higher forms from lower, owing to the fact that the palæontological record of lower animals is more complete than that of lower plants, the author proceeds to define the term parasite, illustrating from the Phanerogams the Algæ and Fungi, including a long discussion of symbiosis and the algo-fungal theory of Lichens and Frank's Mycorrhiza, and concluding with a few theories on the origin of vegetable parasites.

White and Yellow Poplars.—H. A. Evans. (Bot. Gazette, xii., pp. 165, 166.)

Mr. Evans presents evidence to show that the white and yellow wood of *Liquidambar* is not produced by different varieties, but by trees of different ages, the older being yellow.

Yucca brevifolia. (Gard. Chron., i., p. 772; illustrated.)

The statement is made that the London Telegraph is supplied with paper made from this Californian species.

Zannichellia palustris, L.—F. W. Anderson. (Bot. Gazette, xii., p. 192.)

The species is reported from a spring near Great Falls, Montana.

Botanical Notes.

Henry William Ravenel, LL.D. Born at Berkeley, S. C., May 19th, 1814; died at Aiken, S. C., July 17th, 1887.

Though most of his life was spent in his native State yet his

work in Cryptogamic Botany covered the flora of the Southern States, and in Fungi and Mosses was practically the first in that region. He was the first to issue a set of American Fungi, "Fungi Caroliniani Exsiccati" (1853-1860), and later with M. C. Cooke, the "Fungi Americani Exsiccati" (1878-1882) were published in eight centuries, collected mostly in the Southern States. Dr. Ravenel's abilities and researches were perhaps better known in Europe than in America, and he had an extensive correspondence with Berkeley, Fries, Montagne, and was a member of the Zoologische Botanische Gesellschaft, the Academy of Natural Science of Philadelphia, and was botanist to the Department of Agriculture of South Carolina at the time of his death. His herbarium, which is practically the only legacy that he leaves his family, contains many type specimens and many well authenticated by M. A. Curtis, Berkeley and others. A full list of his works, as given by W. G. Farlow, will be found in the Botanical Gazette, xii., pp. 194-197.

Swedish Linnæan Monument Association. It is proposed to erect in Lincoln Park, Chicago, Ill., an exact counterpart of the statue of Linnæus recently unveiled in the Royal Gardens at Stockholm. Several meetings have been held by the above named association, at which definite arrangements have been made for carrying on the work. The estimated cost of the statue is \$30,000, and subscriptions are solicited from all botanists in the United States.

The Tubercular Swellings on the Roots of Leguminosæ. H. Marshall Ward (Proc. Royal Soc., xlii., p. 331), Preliminary Note. "The author finds that the tubercles on the roots of the Leguminosæ are due to the action of a parasitic fungus. Not only has he produced the tubercles by infection from without, but he has also found the infecting agent, and repeatedly seen and figured the infecting hypha passing down inside a root-hair and across the cortex of the root into the young tubercle. Here the hyphal branches bud off yeast-like cells, which are extremely minute and numerous, and resemble bacteria at first sight; they differ in their mode of multiplying by budding."

"The action of these minute germ-like bodies causes the protoplasm of the cells of the root to assume plasmodium-like

characters, and induces the flow of nutritive substances to these cells, and hypertrophy results. On the decay of the tubercle, the germ-like bodies pass into the soil (where they can always be found) and infect other roots; it is very probable they may be of extreme importance in agriculture."

*Tubercles on the Roots of Leguminosæ.** (Journ. Roy. Mic. Soc. 1887, p. 610.)

The studies conducted by A. Tschirsh lead him to the conclusion that they occur on all species of this order, always on the roots; that they are storage organs for nitrogenous matters previous to the ripening of the seeds, and attain their maximum development when the plant is in flower. They are of two kinds, the *Lupinus* type and *Robinia* type.

Tubercles on the Roots of Alder and Elæagnaceæ.† (Journ. Roy. Mic. Soc. 1887, p. 611.)

B. Frank has modified his previous views as to their nature and differs entirely from those who regard them as due to parasitic fungi; they prove to be accumulations of newly formed albuminous substances and are therefore identical with those on the Leguminosæ. "The alleged parasitic fungi *Schinzia Alni*, *S. Leguminosarum*, *Plasmodiophora Alni*, and *Frankia subtilis* must therefore be erased from mycology."

Proceedings of the Club.

A meeting was held on Tuesday evening, August 9th, 1887, in Hamilton Hall, Columbia College, President Newberry in the chair, and forty-five persons present. Among the visitors were many members of the American Association for the Advancement of Science. In the absence of the Secretary, Dr. N. L. Britton was elected Secretary *pro tempore*.

Mrs. Cornelius Van Brunt, Mr. C. S. Boyer, and Jacob J. J. Gress were elected Active Members.

The Secretary read a letter from Dr. George Vasey calling attention to the fact that the United States Government has done nothing for botanical exploration for many years; stating also

* Ber. Deutsch. Bot. Gesell. v, (1887), pp. 58-98, (1 pl).

† Ber. Deutsch. Bot. Gesell. v, (1887), pp. 50-58, (1 pl).